CLAIMS

1. A shape memory alloy having a low martensitic transformation temperature, said alloy comprising Copper and Zinc in the range of 62-86% of Copper and 10-28% of Zinc along with 6% of Aluminum.

2. A shape memory alloy as claimed in claim 1, wherein said alloy having a martensitic transformation temperature lowered by about 80^0C.

3. A shape memory alloy as claimed in claim 1, wherein said alloy displays good shape memory at a re-betatising temperature of about 575^0C.

4. A shape memory alloy as claimed in claim 1, wherein said alloy having good fatigue properties thereby preventing quench cracking.

5. A shape memory alloy as claimed in claim 1, wherein said alloy once processed can be utilized for some other temperature device or application.

6. A shape memory alloy as claimed in claim 1, wherein said alloy having good shape memory response properties.

7. A process for lowering the Martensitic Transformation Temperature(As) of shape memory alloy as claimed in claim 1, by a re-betatising treatment of previously high temperature betatised material, said process comprising the following steps of:

(i) selecting an alloy comprising Copper and Zinc in the range of 62-86% of Copper and 10-28% of Zinc along with 6% of Aluminum;

(ii) melting alloy composition in an induction furnace operating in air under charcoal cover followed by casting into desired shapes;

(iii) homogenizing the above composition at 800^0C for a period of about two hours followed by cooling;

(iv) surface machining for removing oxide scale formation;

(v) analyzing the alloy composition

(vi) re-heating the shaped material at about 575^0C for about three minutes;

(vii) quenching said material with cold water;

(viii) obtaining a fully martensitic structure;

(ix) identifying the soft shape memory material with martensitic structure; and

(x) recording the temperature and structure of the material;

8. A process as claimed in claim 7, wherein the martensitic transformation temperature (As) is lowered by about $80^{0}C$.

9. A process as claimed in claim 7, wherein the loss of Zinc or Aluminum raises the martensitic transformation temperature whereas increase of these elements lowers the transformation temperature.

10. A process as claimed in claim 7, wherein material once cast and processed can be utilized for some other temperature device or application.

11. A process as claimed in claim 7, wherein shape memory response properties are not affected.

12. A process as claimed in claim 7, wherein the two-step betatising and resultant lowering of transformation temperature is valid for higher Aluminum content of 6-10 % shape memory alloys.